1. 编写一个自动出题程序，该程序可以给出任意两个数的加、减、乘、除运算式子。当用户输入运算结果后，程序可以判断正误。当用户做完十道题目之后，程序给出最终的统计结果。

源代码:

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| #include<stdio.h>  #include<time.h>  #include<stdlib.h>  int main(){  int add(int,int);  int sub(int,int);  int mult(int,int);  float divi(int,int);  float get\_ans();  bool judge(float,float);  printf("Here are ten random calculation questions. Please answer them.\n");  srand((unsigned) time(NULL));  int a,b,op,n,op\_string;  bool res;  for(int i=1;i<=10;i++){  a=(int) 10\*(rand()/(float) RAND\_MAX)+1;  b=(int) 10\*(rand()/(float) RAND\_MAX)+1;  op=(int) 4\*(rand()/(float) RAND\_MAX)+1;  if (op==1){  printf("No.%d:\033[4;1m%d+%d\n\033[0mYour answer:",i,a,b);  res=judge(get\_ans(),(float) add(a,b));  if (res){  n++;  }  }  else if(op==2){  printf("No.%d:\033[4;1m%d-%d\n\033[0mYour answer:",i,a,b);  res=judge(get\_ans(),(float) sub(a,b));  if (res){  n++;  }  }  else if(op==3){  printf("No.%d:\033[4;1m%d\*%d\n\033[0mYour answer:",i,a,b);  res=judge(get\_ans(),(float) mult(a,b));  if (res){  n++;  }  }  else if(op==4){  printf("No.%d:\033[4;1m%d/%d\n\033[0mYour answer:",i,a,b);  res=judge(get\_ans(),divi(a,b));  if (res){  n++;  }  }  }  printf("End of answer.\nYou answered %d question(s) correctly.\n",n);  }  int add(int a,int b){  return a+b;  }  int sub(int a, int b){  return a-b;  }  int mult(int a, int b){  return a\*b;  }  float divi(int a,int b){  return (float)a/(float)b;  }  float get\_ans(){  float ans;  scanf("%f",&ans);  return ans;  }  bool judge(float a,float b){  if(a==b){  printf("\033[32mYour answer is Correct!\033[0m\n");  }  else{  printf("\033[31mYour answer is Wrong!\033[0m\n");  }  return a==b;  } |

输出:

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| Here are ten random calculation questions. Please answer them.  No.1:7/6  Your answer:0  Your answer is Wrong!  No.2:5/10  Your answer:0.2  Your answer is Wrong!  No.3:5+6  Your answer:11  Your answer is Correct!  No.4:9-9  Your answer:0  Your answer is Correct!  No.5:5-6  Your answer:-1  Your answer is Correct!  No.6:4+8  Your answer:12  Your answer is Correct!  No.7:2+1  Your answer:3  Your answer is Correct!  No.8:4\*1  Your answer:4  Your answer is Correct!  No.9:3-10  Your answer:-7  Your answer is Correct!  No.10:5\*6  Your answer:30  Your answer is Correct!  End of answer.  You answered 8 question(s) correctly. |

1. 自定义一个求n的阶乘的函数。在主函数中调用该函数，当用户输入非负数的时候，程序输出该数的阶乘；当用户输入负数的时候，程序退出。

源代码:

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| #include<stdio.h>  int main(){  int factorial(int);  while (true){  printf("Please input a number, this progamme will make a factorial for it.\n");  printf("Your number is:");  int num;  scanf("%d",&num);  if (num<0){  printf("End of Progamme.\n");  break;  }  printf("%d\'s factorial is %d.\n",num,factorial(num));  }  }  int factorial(int n){  int res=1;  for(int i=1;i<=n;i++){  res=res\*i;  }  return res;  } |

输出:

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| Please input a number, this progamme will make a factorial for it.  Your number is:3  3's factorial is 6.  Please input a number, this progamme will make a factorial for it.  Your number is:4  4's factorial is 24.  Please input a number, this progamme will make a factorial for it.  Your number is:-1  End of Progamme. |

1. 自定义一个函数，判断字符是数字、小写字母、大写字母还是其它。返回值为0时，表示数字；为1时，表示小写字母；为2时，表示大写字母；为3时表示其它。在主函数中调用该函数，判断用户输入的字符是哪一种，并输出“是数字”、“是小写字母”、“是大写字母”、“其它”；当用户输入”#”的时候，程序退出。

源代码:

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| #include<stdio.h>  int main(){  void judge(char);  while (true){  printf("Please input a character:");  char letter;  scanf("%c",&letter);  getchar();  if (letter==35){  printf("End of Pragamme.\n");  break;  }  else{  judge(letter);  }  }  }  void judge(char chara){  if(chara>=48 && chara<=57){  printf("This is a number.\n");  }  else if(chara>=65 && chara<=90){  printf("This is a capital.\n");  }  else if(chara>=97 && chara<=122){  printf("This is a lowercase letter.\n");  }  else{  printf("This is a other character.\n");  }  } |

输出:

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| Please input a character:a  This is a lowercase letter.  Please input a character:D  This is a capital.  Please input a character:4  This is a number.  Please input a character:)  This is a other character.  Please input a character:#  End of Pragamme. |